



***Synergia LLC***

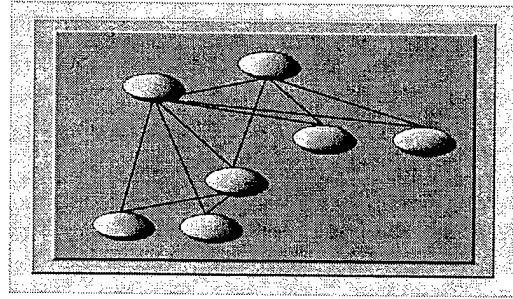
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# **Computational Models of Human Organization Dynamics**

## **Quarterly Report #3**

Sponsored by  
Defense Advanced Research Projects Agency  
Information Systems Office  
Computational Models of Human Organization Dynamics  
ARPA Order No. E495  
Program Code No. 6S10  
Issued by DARPA/CMO under Contract #MDA972-97-C-0001

**Period Covered: 10/16/97 – 1/15/98**

## ***Reporting Period***

This is the third quarterly report for the project: Computational Models of Human Organization Dynamics. This report covers the period from 10/16/97 through 1/15/98.

## ***Progress During Reporting Period***

During this project period we have made significant progress on the development of the mapping, modeling, and analysis technologies we described in our previous quarterly report.

We have also developed an agent architecture, with respect to which agent practices have their operation. This architecture defines how agents receive information from the world, how they select practices for execution, how they resolve ambiguity over which practices to undertake (i.e., resolve conflicts; cope with uncertainty), and how they execute practices.

We have also developed a complete and realistic crisis scenario – a Noncombatant Evacuation Operation (NEO) occurring in Tanzania. The scenario has been reviewed and corrected/enhanced by special operations, army planning, and Africa experts. This scenario has a wealth of intentional actors whose practices are interdependent and conflicting. Some of the intentions and even some of the actors are hidden. The latter leads to anomalies – conflicts between trusted data and implications of a trusted model. Anomalies are captured as part of the validation studies aimed at testing and verifying the emerging organization model. We show that anomalies can be used as the basis for real-time critique and revision of models. We thus illustrate that organizational modeling, model critique and validation, and analysis can occur not only prior to but also during operations. In other words, the tools are suitable for in situ analysis (e.g., planning based on simulation of organizational dynamics under various threat scenarios), in addition to their role in off-line studies of organizational practices (e.g., aimed at learning and redesign).

## ***Plans for Next Quarter***

We plan to critique our technologies and continue to develop them as project resources permit. We will also revisit the practice mapping methodology to see how well the technologies we are developing support the overall methodology.

These results will be reported in our final report for this base phase of the contract.

## ***Equipment Purchases***

There were no equipment purchases this quarter.

### ***Personnel Matters***

There have been no changes in the key personnel proposed for this project – Drs. Fehling and Courand.

### ***Meetings, Important Exchanges and Decisions***

We presented a project review to Dr. Steven Flank, at our offices, on 12/1/97. We described the conceptual framework for our concept of organization; our view of crisis, crisis response, and crisis response support; and presented a demonstration of the technologies we have prototyped, as illustrated by their use to support planning in the NEO scenario we invented.

### ***Problems***

We have no problems to report at this time. We foresee no substantial risks to our ability to complete this project successfully, on time, and on budget.

### ***Fiscal Status***

The table below summarizes the fiscal status for this contract and our projected spending over the next quarters.

Amount Currently Provided	\$374,813.
Expenditures and Commitments to Date	\$322K
Manhours Planned, Actual	Planned = 700          Actual = 717
Estimated Funds/Qtr to Complete Work	\$42K
Estimated Date of Completion	2/28/98

### ***Distribution of this Report***

The following individuals/organizations comprise the distribution list for quarterly reports on this contract.

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